

REMARKS

This Amendment responds to the Office Action mailed on April 1, 2009. Claims 23-28 and 30-44 are now pending.

Claim Amendments

Claim 23 has been amended to recite a portable computing device having an operating system. Support for that feature can be found, for example, in original claim 13 of the application as filed. Claim 23 is amended to recite a memory management unit. Support can be found, for example, on page 5, lines 16 to 25 of the application as filed. Claims 23, 24, 30, and 34 have been amended to recite that the claimed device is a portable device or a portable computing. Support can be found, for example, in the Abstract and at page 1, lines 7 and 29 of the application as filed. Claims 26, 27 and 39 are amended in formal matters. Claim 43 is newly added and recites features as in other claims now pending, and is therefore supported by the specification as filed.

Rejection under 35 U.S.C. 103(a)

Claims 23-28 and 30-42 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Gaskins et al. (U.S. Patent 5,606,315) in view of Hale (U.S. Patent 5,355,414) and further in view of Gardner (U.S. Patent 7,272,832). Applicant respectfully submits that the cited references, whether considered individually or in combination, do not disclose or suggest all of the features of the invention as defined by the amended claims.

As will be appreciated from the following discussion of Gaskins and Hale, the proposed combination of Gaskins and Hale would merely provide access control to an EEPROM or keyboard controller memory which is already removed from use by an operating system. The combination, however, does not disclose or suggest acquiring device memory such that it is no longer available to the operating system in a manner that is independent of the operating system, nor does it disclose or suggest controlling access and processing read/write operations to the device memory independently of the operating system.

The further proposed modification in view of Gardner is beyond a reasonable modification by a person of ordinary skill in the art or, in the alternative, is not combinable with the other references so as to result in the claimed invention (i.e., would be different or inoperative, as proposed), because complex architecture of Gardner that is required for the disclosed secure platform architecture (“SPA”) and secure platform kernel (“SPK”) results in a fixed physical memory structure and no ability to take away memory that was previously available to an operating system, as called for in each of the pending claims. Memory in Gardner is claimed by the SPA and SPK upon installation and is not taught or suggested as memory that was previously available to an operating system and then taken away.

In contrast, the claims prior to the present amendment already recited that at least a portion of the memory is acquired and removed from being available for use by the operating system. The present amendment recites a memory management unit that accomplishes these tasks, and is absent from the cited references, alone or in combination, as is the underlying task performed by this module.

Accordingly, the invention defined by the claims now pending operates in conjunction with existing operating systems and memory management units in a manner that is neither disclosed nor suggested in the cited references in any combination.

Further Discussion of Teachings of Gaskins

Gaskins is directed to a system for securing protected data stored in an electronic module that "allows non-sensitive data to be accessed by external communication tools, but prohibits access to the protected data unless a password is first entered." (Gaskins, Abstract). The system includes a microprocessor unit (MPU), a read only memory (ROM), a random access memory (RAM) and an electronically erasable programmable read only memory (EEPROM) (column 3, lines 22 to 26). The ROM contains the program steps for operating the MPU. The RAM temporarily stores data which may be read from various locations in accord with the program stored in the ROM (column 3, lines 40 to 43).

Gaskins therefore does not disclose means arranged to interact a memory management unit of the portable computing device to acquire at least a portion of the memory available for use by the operating system. The EEPROM of Gaskins is dedicated to the system for securing protected data, is not a standard component of a portable computing device and furthermore is not available for use by the operating system. It is a separate memory from the RAM. Furthermore, Gaskins does not disclose interacting with a memory management unit or removing the acquired memory from being available for use by the operating system. Applicants contend that the status of the

EEPROM in Gaskins is not changed in any way. Applicants further contend that if it could be argued that the EEPROM in Gaskins was available for use by the operating system, at no point does it subsequently change to being unavailable, nor could it ever comprise a memory management unit that is responsible for the EEPROM.

Further Discussion of Teachings of Hale

Hale is directed to a security system in which a keyboard and mouse may be disabled after a period of inactivity. The security system of Hale executes within the keyboard controller and is therefore said to be independent to the host operating system (column 15, lines 13 to 16). Applicants respectfully contend that no memory that is available for use by the operating system is acquired in Hale. As discussed in Hale, column 15 lines 19 to 24, “no operating routine needs to be installed ... because the security system instructions are always stored in the keyboard controller memory. Thus the security routine does not conflict with other application programs”. The keyboard controller memory in Hale is not available for use by the operating system, nor is it removed from being available for use by the operating system. Furthermore, applicants respectfully contend that no memory management is interacted with in Hale. A memory management unit is a specific component of a general purpose computing device such as the portable computing device of the present claims that is responsible for management of physical general purpose memory for use by the operating system and applications. A memory management unit would not be responsible for keyboard controller memory such as disclosed in and proposed by Hale.

Further Discussion of Teachings of Gardner

Gardner discloses a process that allows a user application to keep secrets from root and other users. This is done by using the memory management services of a Secure Platform Kernel (SPK) 36 to create secure partitions in memory (column 21, lines 21-26). The SPK 36 runs as a privileged task that is part of the secure platform architecture (SPA) that runs on top of processor hardware having at least one processor that has four execution privilege levels (column 3, lines 14-39). Gardner requires a complex architecture processor having four privilege levels to control access to secrets. The structure of physical memory 74 in Gardner is fixed by necessity due to installation of the SPA and SPK as shown in Figure 3. Gardner does not disclose taking away memory previously available to an operating system. Memory in Gardner was never available to the operating system, it had been taken by the SPA and SPK on installation.

Therefore, for at least the reasons discussed above, the independent claims are submitted to define patentably over the combination of Gaskins modified in view of Hale and in further view of Gardner. Reconsideration and allowance of all claims is requested.

Submitted herewith is the fee for a three month extension of time.

It is believed that no further fees are due or that all fees have been paid; however, if the Patent Office believes that fees due, Deposit Account No. 50-4570 can be accessed up to \$800.00.

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